1. Natural panoramas from video sequences in real-time

Not the usual real-time slit imaging, nor off-line slit image based
• video and frame based
• treats moving objects correctly

2. Interactive document panorama imaging

Panoramas from “flat” targets
• the device guides the user
• frame selection based on quality measurements
• motion estimation based fast initial registration
Highly interactive

3. GPU-acceleration for panorama construction

The computing resources:
Fixed function pipeline (OpenGL ES 1.1) vs.
programmable pipeline (OpenGL ES 2.0)

4. Context triggered product information retrieval application

1. Display backlight is turned on if a face is in the field of view
2. If the back camera detects a bar code, guidance for moving the device is shown, if necessary
3. A readable bar code image is built and the code read
4. Product information is retrieved from the Internet

5. The practical challenges

1. The aiming and field of view of the frontal cameras in current devices are not optimal for the application
2. No support for “always-on slow rate frame capture mode”
3. The programming model of OpenGL ES

6. The realistic opportunities

1. The programming model of OpenCL
2. Context sensitive interactions